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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,047	08/21/2003	Sampath Purushothaman	YOR920030029US2 (16841)	6546
23389	7590	05/23/2005	EXAMINER	
SCULLY SCOTT MURPHY & PRESSER, PC 400 GARDEN CITY PLAZA SUITE 300 GARDEN CITY, NY 11530			GRAYBILL, DAVID E	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/645,047

Applicant(s)

PURUSHOTHAMAN ET AL.

Examiner

David E. Graybill

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 19-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 19-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2-23-5.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is insufficient antecedent basis for the following language:

Claims 2 and 7, "said substrate to be transferred";

Claim 3, "said at least one semiconducting component";

Claim 16, "said carrier substrate."

Claims 1-10, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are those between the carrier assembly and the remaining elements.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

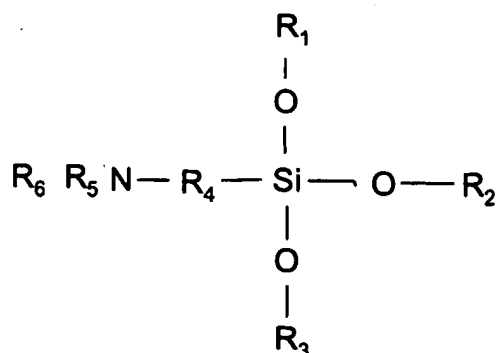
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-11 and 13-17 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by applicant's admitted prior art.

In the instant specification, at paragraphs 3-18, 29 and 51-53, applicant admits as prior art the following:

A structure for interconnecting semiconductor components comprising: a layered substrate 100 for transferring; a bi-layer capping coating 200 on top of the substrate, each layer of said coating provides adhesion and protection; and a carrier assembly 300, 400, 500; wherein said substrate to be transferred contains at least one semiconductor component; wherein said at least one semiconducting component is selected from the group consisting of semiconductor devices, semiconductor circuits, thin-film layers, passive and/or active elements, interconnecting elements, memory elements, micro-electro-mechanical elements, optical elements, optoelectronic elements, and photonic elements; wherein said carrier assembly comprises a carrier wafer 500, an adhesive layer 400 and an intermediate layer 300; wherein said carrier assembly comprises glass and an intermediate layer of polyimide;

wherein said carrier wafer is selected from the group consisting of silicon, silicon-on-insulator, silicon germanium-on-insulator, alumina, quartz, Group III-V or II-VI semiconductor wafers, and ceramics; wherein said substrate to be transferred is terminated by a layer comprising a metallic component 103; wherein said metallic component is a patterned wiring level or a blanket film; wherein said metallic component is selected from the group consisting Ti, Ta, Zr, Hf, their silicides nitrides and their conducting siliconitrides; Cu, Al, composites of these materials with glass; and combinations thereof; wherein said capping coating provides passivation to the metallic component; wherein said capping coating comprises: a first layer that serves as a diffusion barrier, while providing adhesion to the substrate; and a second layer that is capable of providing adhesion to the carrier assembly and is an additional diffusion limiting layer; wherein said second layer comprises an amino silane and is an adhesion promoter to an intermediate layer 300; wherein said amino silane is a compound of the formula:



wherein R₁, R_a, R₃, R₅ and m are, independently of each other, hydrogen, a lower alkyl radical containing from 1 to about 6 carbon atoms, an acyl radical containing 1 to 6 carbon atoms, or an allyl, alkylene or alkynyl radical containing 2 to 6 carbon atoms, and m is a lower alkyl containing from 1 to 6 carbon atoms or an aromatic system; wherein said polyimide material is selected from the group consisting of polyamic acid (PAA)-based polyimides, polyimide ester-based polyimides, and pre-imidized polyimides; wherein said carrier substrate comprises glass and intermediate layer of polyimide to allow for a further release process; wherein said first layer inherently further serves as protection (at least via adhesion and as a physical barrier) against a removal process of said carrier assembly.

To further clarify, applicant admits as prior art a bi-layer capping coating because applicant admits as prior art a capping coating having "a few monolayers."

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art as applied to claims 11 and 17, and further in combination with Van Andel (5287003).

Applicant does not appear to explicitly admit as prior art wherein said first layer comprises silicon nitride, and said first layer protects from an oxygen-based plasma removal process.

Application/Control Number:
10/645,047
Art Unit: 2822

Page 7

Nonetheless, at column 3, line 51 to column 6, line 3, Van Andel discloses wherein a first layer 20 comprises silicon nitride, and said first layer protects from an oxygen-based plasma removal process. Moreover, it would have been obvious to combine this disclosure of Van Andel with applicants admitted prior art because it would desirably passivate the semiconductor component of the admitted prior art.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions similar to the instant invention.

For information on the status of this application applicant should check PAIR:

Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alternatively, applicant may contact the File Information Unit at (703) 308-2733.

Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours:

Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is (703) 872-9306.



David E. Graybill
Primary Examiner